Maine Aquaculture Association

Finfish Bay Management Agreement

Maine Aquaculture Association

Finfish Bay Management Agreement

January 2002

Table of Contents

Bay Management Agreement

Appendices

FINFISH BAY MANAGEMENT AGREEMENT

THIS AGREEMENT made in January 2002.

BETWEEN: L.R. Enterprises, Inc., a body corporate under the laws of the State of Maine, and Maine Coast Nordic, a body corporate under the laws of the State of Maine, and Treat's Island Fisheries, Inc., a body corporate under the laws of the State of Maine, and Atlantic Salmon of Maine, LLC, a body corporate under the laws of the State of Maine, and D.E. Salmon, Inc., a body corporate under the laws of the State of Maine, and Stolt Sea Farm, Inc., a body corporate under the laws of the State of Maine, and International Aquafoods USA, Inc., a body corporate under the laws of the State of Maine, and Heritage Salmon, Inc., a body corporate under the laws of the State of Maine, and Island Aquaculture Company, Inc., a body corporate under the laws of the State of Maine.

WHEREAS the Maine Salmon Aquaculture Industry is faced with new economic and environmental challenges to its continued existence;

AND WHEREAS the parties wish to remain competitive in the Maine Salmon Aquaculture Industry and have a continued commitment to environment sustainability;

AND WHEREAS the parties are Farm Occupants as defined herein:

AND WHEREAS the parties hereto are desirous of entering into this Agreement to ensure the long-term viability of the Maine Salmon

Aquaculture Industry and in particular the bay area where they operate their businesses;

NOW THEREFORE in consideration of the mutual Covenants and Agreements herein contained and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by each party hereto, the parties hereto agree as follows:

1. DEFINITIONS

(a) "Actions Required" means the actions identified by the parties as necessary to allow the Farm Occupants to attain the Long Term Target;

(b) "Bay Management Area Communication Plan" means a plan that clearly outlines responsibilities, methods, and standards for communications between Farm Occupants in a specific bay management area. This plan must be consistent with the Guidelines outlined in Appendix C of this Agreement;

(c) "Bay Management Area Fish Health Management and Biosecurity Plan" means a specific Bay Management Area Plan designed to coordinate the fish health management strategies and biosecurity protocols of all Farm Occupants of a bay management area. This plan must be consistent with the Guidelines outlined in Appendix D of this Agreement;

(d) "Bay Management Area Integrated Pest Management Plan" means a specific Bay Management Area Plan designed to coordinate the pest

control strategies and actions of the Farm Occupants of a bay management area. This plan must be consistent with the Guidelines outlined in Appendix E of this Agreement;

(e) "Bay Management Area Waste Management Plan" means a specific Bay Area Management Plan designed to coordinate the waste management protocols of all Farm Occupants of a bay management area. This plan must be consistent with and designed to locally implement the standards outlined in Appendix F of this Agreement. This plan is developed by the local Bay Management Group, reviewed, and approved by the parties to this Agreement;

(f) "Bay Management Area" means local management areas set out in Section 2 of the Bay Management Area Plan;

(g) "Bay Management Agreement" means this Agreement as amended from time to time;

(h) "Bay Management Group" means all of the representatives of the Farm Occupants in a specific bay management area as outlined in Section 3 of the Bay Management Area Plan;

(i) "Bay Management Area Plan" means a set of predetermined strategies, minimum operational practices, and implementation schedules, developed by the Bay Management Group for their own bay management area. These strategies, operational practices and implementation schedules seek to achieve the bay management area long term target in as timely a fashion as possible without

unreasonably compromising any individual Farm Occupants competitive position. The Bay Management Area Plan must be consistent with the format and contents outlined in Appendices A-H of this Agreement;

(j) "Constraints" means impediments identified by the parties which restrict their ability to achieve the Long Term Target;

(k) "Fallowing Period" means the period of time during which no fish are held or contained on a farm;

(l) "Farm Occupants" mean the holders of the Maine Department of Marine Resources Aquaculture Leases, as set out in Section 3 of their Bay Management Area Plan;

(m) "Long Term Target" means the management and production growth cycle the Farm Occupants are striving to attain in the future for their bay management area as set out in Section 4 of their Bay Management Area Plan;

(n) "Salmon" means any fish of the salmonoid family;

(o) "Single Year Class" means the growout to market size of salmon at a site for one-year class before entry to the site of salmon of another year class;

(p) "Time Period" means the length of time as set out in Section 8 of their Bay Management Area Plan for the parties herein to implement the Bay Management Area Plan;

(q) "Transition Mechanism" means the operating practices the Farm Occupants intend to utilize in moving from their respective current operating practices to the Long Term Target as outlined in Section 9 of their Bay Management Area Plan. These practices must be consistent with the standards outlined in Appendix B of this Agreement;

(r) "Year Class Carry Over" means the limited carry over of market sized fish from one year class past the stocking of smolts from another year class; and

(s) "Year Class" means all fish stocked on a marine site originating from the same generation. These juvenile fish may be the product of spawning that occurred in two different calendar years.

2. <u>TERM</u>

(a) The term of this Agreement shall commence on November 1, 2001 and continue until all the salmon of the spring 2000 year class are completely harvested, but in no event later than 24 months following the commencement date (the "Term") provided; however, the Term shall immediately expire upon the expiration of the Farm Occupants Maine Department of Marine Resources Aquaculture Lease; and

(b) In the event that upon the expiration of the Term a new year class of salmon have been placed in the bay management area, the Term shall be automatically extended for a further period of equal duration upon the same terms and conditions contained herein, provided however, the Term shall immediately expire upon the expiration of the Farm

Occupants Maine Department of Marine Resources Aquaculture Lease.

3. BAY MANAGEMENT PLANS

The Parties, in accordance with their Mission Statement, a copy of which is attached as Appendix A "Mission Statement" and with the support of the involved government agencies, agree to establish and adopt a Bay Management Area Plan for all Areas in Maine State waters containing active salmon farms. The parties agree that all Bay Management Area Plans will consist of the following strategies, plans, implementation schedules, and minimal operation standards pursuant to the goals and objectives of the bay management area in order to attain the long-term target for the bay management area.

BAY MANAGEMENT PLAN

Section 1. Area Mission Statement
Section 2. Area Boundaries
Section 3. Area Farm Occupants
Section 4. Area Long Term Target
Section 5. Area Transition Period
Section 6. Area Constraints
Section 7. Area Actions Required
Section 8. Area Time Period
Section 9. Area Transition Mechanisms
Section 10. Area Communications Plan
Section 11. Area Waste Management Plan
Section 12. Area Integrated Pest Management Plan
Section 13. Area Fish Health Management and Biosecurity Plan
Section 14. Area Disinfection Protocols

The parties further agree that all sections of the Bay Management Area Plans must be consistent with the Guidelines and Minimum Standards established in this Agreement and its' Appendices. The parties commit to

review in a timely fashion the Bay Management Area Plans developed by the local Bay Management Group of a particular bay management area. A template Bay Management Plan is provided in Appendix H of this Agreement.

4. MEETINGS

The Parties or their designees agree to hold not less than two meetings during each year during the Term and such further meetings as may be required. Written minutes shall be prepared and circulated to the Farm Occupants. A representative of the Maine Aquaculture Association shall attend all meetings and act as Secretary.

5. INDUSTRY AND GOVERNMENT MINIMUM STANDARDS

The parties shall comply with all government regulations and industry standards established and approved by the Finfish Steering Committee of the Maine Aquaculture Association and the Maine Department of Marine Resources.

6. AMENDING PROCEDURES

If at any time during the continuance of this Agreement the parties hereto shall deem it necessary or expedient to make any alteration or addition to this Agreement, they shall do so by way of a written agreement passed unanimously by the Farm Occupants provided that, the proposed amendment has been approved unanimously by the Finfish Steering Committee of the Maine Aquaculture Association, which shall be supplemental hereto and form a part hereof and to take effect at such time

set out in the written amending agreement. In the event that the MAA Finfish Steering Committee does not unanimously approve the amendment, the written agreement passed unanimously by the Farm Occupants stands. For greater certainty it is agreed and understood that the schedules attached hereto may contain their own amending procedures.

7. ARBITRATION

The parties agree that all disputes or questions whatsoever which shall arise among the Parties touching this Agreement or the construction or application of any clause or any other matters in any way relating to this Agreement shall be referred to a single arbitrator nominated by the Maine Aquaculture Association and approved by all parties to the Bay Management Agreement.

8. EARLY TERMINATION

This Agreement may be terminated by a majority of the parties to the Bay Management Agreement prior to the expiration of the Term provided however, that a new Bay Management Agreement has been executed prior to termination, it being intended that a Bay Management Agreement shall be in full force and effect during any particular grow out period.

9. INVALID PROVISIONS

If any provisions of this Agreement shall be found to be or be deemed illegal or invalid, the remainder of this Agreement shall not be affected thereby.

10. GOVERNING LAW

This Agreement and all rights and remedies hereunder shall be governed and construed according to the laws of the State of Maine.

11. NOTICE

Except as hereinafter provided, any notice or communication hereunder shall be deemed valid and effectual, if in writing and delivered personally or by fax or sent by registered or certified mail addressed to the Farm Occupants at their respective addresses set out in Appendix C.

12. RELATIONSHIP OF PARTIES

Nothing herein contained shall be deemed or construed by the parties hereto or by any third party as creating the relationship of principal and agent, partnership, or joint venture between the parties. This agreement is intended solely for the purpose of integrated fish health and environmental management. This Agreement is in no way intended to coordinate production or business strategies for the purposes of price or market influences.

13. GENERAL

The parties covenant and agree to execute further documents, agreements, and assurances that may be deemed necessary or advisable from time to time in order to carry out the terms and conditions of this Agreement.

14. ENTIRE AGREEMENT

This Agreement and any Appendices annexed hereto constitute the entire Agreement between the parties with respect to the subject matter hereof.

15. WAIVER

Forbearance, indulgence or failure to exercise any remedy or recourse by either party in any regard whatever shall not constitute a waiver of the covenant.

16. HEIRS, SUCCESSORS, AND ASSIGNS

This Agreement shall endure to the benefit of and be binding upon the parties hereto and their respective heirs, successors and (to the extent permitted) assigns.

IN WITNESS WHEREOF the parties hereto have caused these presents to be executed the day and year first above written.

_____ _____
William Groom Date
L.R. Enterprises, Inc.

_____ _____
Witness Date

_____ _____
William Groom Date
Maine Coast Nordic

_____ _____
Witness Date

Dan Marshall, General Manager Treat's Island Fisheries, Inc.	Date
Witness	Date
David L. Peterson, CEO Atlantic Salmon of Maine, LLC	Date
Witness	Date
Shirley Roach-Albert D.E. Salmon, Inc.	Date
Witness	Date
Shirley Roach-Albert Stolt Sea Farm, Inc.	Date
Witness	Date
Shirley Roach-Albert International Aquafoods USA, Inc.	Date
Witness	Date

W.D. Robertson
Heritage Salmon, Inc.

Date

_____
Witness

_____
Date

_____
Sonny Sprague, General Manager
Swan's Island Aquaculture, Inc.

_____
Date

_____
Witness

_____
Date

BAY MANAGEMENT AGREEMENT
APPENDICES

A. Bay Management Area Mission Statement

B. Bay Management Area Transition Mechanism Guidelines

C. Bay Management Area Communication Plan Guidelines

D. Bay Management Area Fish Health Management and Biosecurity Plan Guidelines

E. Bay Management Area Integrated Pest Management Plan Guidelines

F. Bay Management Area Waste Management Plan Guidelines

G. Bay Management Area Disinfection Protocols

H. Bay Management Area Plan Template

APPENDIX A

MISSION STATEMENT

As marine farmers, we have a strong vested interest in healthy marine ecosystems and a clean marine environment. Our mission is to achieve long-term viability and competitiveness in the Maine Salmon Farming Industry with a continued commitment to environmental sustainability and stewardship. We seek to promote responsible development and management of the Maine Salmon Farming Industry in order to assure the production of high quality food while respecting environmental considerations and consumer demands.

To fulfill our mission we will strive to implement the following goals:

a) Implement a Bay Management Plan designed to facilitate operational coordination to minimize fish health and environmental risks;
b) Establish single year class sites and bay management areas;
c) Ensure that bay management areas that are in full compliance with the goal of single year class sites shall not revert to multi-year class sites and/or bay management areas;
d) Achieve minimum fallowing periods between year classes designed to minimize fish health and environmental risks; and
e) Support continued research on carrying capacity in bay management areas.

APPENDIX B

TRANSITION MECHANISMS GUIDELINES

All Farm Occupants recognize that attaining a bay management area long-term target may take some period of time. During this "transition period", it may be necessary for Farm Occupants to engage in certain operating practices that once a bay management area attains it's long term target are not allowed. These short-term operating practices are "transition mechanisms." These guidelines are intended to clarify what operating practices qualify as transition mechanisms and to establish standards for their use.

- The purpose of transition mechanisms must ultimately be the attainment of the bay management area long-term target in a timely fashion;
- The use of transition mechanisms should be conditional on their review and approval of the Bay Management Group;
- Transitional mechanisms should have clearly defined limits on the length of time they may be employed for; and
- Transition mechanisms should include a clear explanation of how they facilitate the achievement of the bay area management long-term target in a timely fashion.

The use of the year class carry over on a single year class site is acceptable as a transition mechanism only under the following circumstances.

- All cages of year class carry over fish have tested negative for ISA for two consecutive months prior to the stocking of a new year class on the same site; and
- All cages of year class carry over fish have been treated for sea lice the month prior to stocking of new year class on the same site.

APPENDIX C

COMMUNICATION GUIDELINES

All Farm Occupants recognize that effective and timely communication among Farm Occupants in the same bay management area can be a powerful tool in reducing individual and collective risk levels. To this end, all Bay Management Groups shall develop and implement a Bay Management Area Communication Plan. The purpose of these guidelines is to encourage and facilitate rapid and clear communication within and between bay management groups. These guidelines are also intended to reduce the risk of misinformation being distributed to the public or management agencies.

- Plans shall be designed to facilitate rapid, consistent, and effective communication between Farm Occupants in a specific bay management area. Plans shall also establish responsibilities, methods, and standards for communications between bay management groups from different bay management areas;
- Communications between Farm Occupants must be clear and timely;
- Farm Occupants should assign and clearly identify one person responsible for all communications with other Farm Occupants in their bay management area. This person should also represent the farm occupant on the Bay Management Group;
- Bay Management Area Communication Plans shall clearly outline a communication flow chart with contact personnel and telephone numbers for all Farm Occupants in the bay management area;
- Bay management communication plans should establish simple risk thresholds that trigger communication with the other Farm Occupants in their bay management area. These thresholds should recognize that different risks may have varying potential impacts. Lower thresholds should be established for risks that have higher potential impacts;
- Bay management communication plans should clarify what risks require notification of all Farm Occupants in a bay management area;
- Bay management communication plans should clarify what risks require notification of only those other Farm Occupants in the bay management area to which the risk applies. At minimum, all Farm Occupants are required to notify all of their immediate neighboring Farm Occupants in the following circumstances:
    1) Detection and confirmation of infectious diseases of regulatory concern; and
    2) Sea lice levels exceeding thresholds established by the Maine Aquaculture Fish Health Committee and contained in Appendix G.
- At a minimum, all communications between Farm Occupants in a bay management area should include the following:
    1) Brief history of the risk emergence;
    2) Characterization of the risk type, including:
        a) Nature of the risk;

b) Prevalence of the risk at the Farm Occupants facility;
c) First assessment of the likelihood that the risk may extend to other Farm Occupants;
d) Species, size, number, and age of fish affected by the risk at the Farm Occupants' facility; and

3) Synopsis of the actions being taken by the affected farm occupant to control and contain the risk.

- Bay management communication plans should be consistent with all notification and reporting requirements in State and Federal law. Farm Occupants and Bay Management Groups should regularly inquire with these authorities as to the current reporting requirements. The Maine Aquaculture Association is an additional information resource.

APPENDIX D

FISH HEALTH AND BIOSECURITY GUIDELINES

In order to minimize disease risks and maximize fish stock performance and animal welfare, all operators should continuously strive to improve their husbandry and farm management practices. All Bay Management Groups shall develop and implement a Bay Management Area Fish Health and Biosecurity Plan.

These Guidelines are recommended for immediate implementation of ALL marine sites in Maine and are intended to reduce the risk of the introduction and spread of infectious diseases (such as ISA) due to human activities onto and between marine sites and cages by movement of farmed fish, equipment and people.

Biosecurity Audits

- All fish culture and salmonoid processing facilities should be subject to third party biosecurity audits at least once a year;
- Facilities that are confirmed positive for ISA or process fish from confirmed positive ISA sites should be subject to biosecurity audits more frequently; and
- Facilities that exhibit consistently poor performance on biosecurity audits should be subject to more frequent biosecurity audits.

Eggs

Although the best current scientific information indicates the risk of vertical transmission for ISA is low, the following guidelines are recommended as good husbandry practices designed to reduce the risk of vertical transmission in general.

- Lethal sampling and disease testing should be conducted on all broodstock;
- No gametes should be used from clinically infected broodstock sites; and
- No gametes should be used from individual broodstock that test confirmed positive for any "pathogen of regulatory concern."

When healthy broodfish are being stripped, the following guidelines should be followed:

- Care should be taken during stripping and fertilization to avoid contamination of eggs and milt with urine, feces, mucus, and blood;
- All equipment, facilities, and clothing should be properly disinfected after each use;
- Strict protocols and high hygiene standards for personnel, clothing, equipment, egg containers, and transport vehicles and boats should be maintained throughout all stages of stripping, fertilization, and transport;

- Gametes moved from marine broodstock sites to fresh water facilities prior to the receipt of fish health testing results should be disinfected and held in quarantine;
- Pre-hardened eggs should be disinfected as soon as possible after fertilization using the procedures outlined in Appendix G; and
- Eyed eggs should be disinfected prior to hatch or movement to another water source using the procedures outlined in Appendix G.

Broodstock

Wherever possible, broodstock should be stocked, raised, and/or held only on specially designated broodstock sites. These sites should not hold fish other than broodstock candidates or selected broodstock. Broodstock should not be reconditioned and/or moved to production sites for ongrowing to harvest.

Movement of broodstock candidates to marine broodstock sites from marine sites in other bay management areas is prohibited. Movement of broodstock candidates to marine broodstock sites from other marine sites within the same bay management area is strongly discouraged. Any movement of broodstock or broodstock candidates is only allowed according to the guidelines outlined below under bullets three and four in the "Fish" section.

Movement of selected broodstock to freshwater sites is permitted only from marine sites participating fully in the industry fish health surveillance program and according to the guidelines outlined above in Paragraph 3.

Eggs and juvenile stages at fresh water facilities must never share the same facility area or water mass with broodstock moved from marine sites.

Movement of broodstock from a marine site to a fresh water facility without the appropriate fish health testing and inspections as required by state regulations may jeopardize the fresh water facility's "qualified source" status.

Fish

- Adopt a single year class per site stocking policy;
- Minimize movement of fish between marine sites;
- If fish have to be moved between marine sites, minimize these occurrences and allow transfer of fish between marine sites only if both the primary and the receiving marine sites are free of diseased cages and both sites have been tested for ISAV nor more than two weeks prior to transfer. Testing for ISA virus shall be done on moribund and/or fresh dead fish; and
- Never move fish between ISA-suspect and ISA-positive marine sites and sites with unknown disease status.

Dead fish collection, storage, and disposal

1. No dead or moribund fish should be released into the water.
2. Collect all dead fish at least once weekly. Aim at daily collection.
3. Use separate mort bags for each cage. Alternatively disinfect nets between cages by submersing net for 15 minutes in 100 ppm iodine disinfectant.
4. Dip and remove moribund fish from cages. Clean and disinfect nets used to dip moribund fish between cages.
5. Remove dead fish from site as soon as possible.
    - Use only mort totes in good condition, never cracked and leaky ones.
    - Cover mort totes with properly fitting lids.
    - Store mort totes away from feed.
    - Place a footbath with disinfectant in the immediate vicinity of the mort tote.
    - Empty mort totes as soon as possible, preferably after each mort dive.
    - Disinfect area beneath and surrounding mort tote whenever it is removed for disposal of dead fish.
    - Disinfect cage handrails and net areas above the water line that mort bags come in contact with.
6. Use Company and site specific equipment for storage and transport of dead fish. Mark or color code containers with company ID and site ID.
7. Store dead fish on shore in plastic lined xactics specifically marked for mortalities.
8. Dispose of dead and moribund fish by taking them off the site as soon as possible in leak-proof and covered totes or xactics and to an approved disposal site.
9. Clean and sanitize mort containers before returning to the designated site. This is best done immediately after disposal.
10. For proper cleaning and disinfection of containers designed for dead fish refer to Appendices F and G.

Blood water

1. Live haul to the processing plant, and no slaughter on site is strongly recommended.
    - If live haul is currently not practiced, then blood water shall not be released into the marine environment without proper treatment;

- All attempts should be made to prevent leakage and spills during harvest and transport; and
- For disposal of and disinfection of blood water, refer to Appendices F and G.

Divers and diving gear

1. Properly disinfect diving gear before first cage and after last cage.
2. Dive cages with elevated mortality last.
3. Dive the youngest fish first.
4. All diver equipment shall be site-specific.
5. If a diver must dive more than one site using the same gear, it is imperative that all gear is disinfected between sites. Specifically, gear should be disinfected after the last cage at the first site and allowed to AIR DRY. At the second site, the gear should be disinfected prior to diving the first cage.
6. Diver attendants shall wear designed, site-specific rain gear and boots. This gear must be properly cleaned and disinfected after each use.
7. The dive boat should be site specific.
8. Diver attendants should not handle feed on that day. If dive attendants must handle feed, they must comply with all proper disinfection procedures. Ideally, the site should have a separate feed and diving crew.

People

1. Limit traffic to sites and require that EVERYONE going to the site properly disinfects on the wharf or boat, and that EVERYONE leaving the site properly disinfects on the boat.
2. Everyone who comes in contact with dead fish, moribund fish, processed fish or fish parts, and blood water shall properly clean and disinfect their gear and themselves (i.e. arms, hands) soon afterwards.
3. Keep employees, including divers, site-specific. Proper disinfection and air-drying of all gear must be enforced between sites when this is not possible.
4. All people traveling to a site must wear footgear that can be disinfected by stepping into a footbath. Sneakers are not acceptable.

Equipment

1. Properly clean and disinfect all equipment after each use. This includes mort totes, diving gear, mort bags, harvest and grading equipment, xactics used to transport harvested fish, dip nets, etc.
2. Do not use cracked, leaky totes/xactics.
3. Retire wooden equipment, including wooden pallets, boats and barges, because they cannot be properly disinfected.

4. Properly disinfect all nets prior to their re-use. Ideally, nets should be washed on shore and all water used for cleaning be collected and disinfected before its disposal. If nets must be washed in the water, then they should be washed on site, rather than a central location, to prevent the potential for transmitting pathogens contained within the debris on the nets from one site to another.
5. Nets from confirmed positive ISA sites should never be washed on site. They should be taken to land and handled under the guidelines established in Appendix G.
6. Properly disinfect everything that comes in contact with dead, moribund, sick, or processed fish or fish parts, and blood water.
7. Prohibit sharing equipment between sites. This includes mort totes, mort bags, nets, or diving gear, etc. When it is not possible to keep equipment site-specific, ensure that it is properly cleaned and disinfected before leaving one site and that it is properly disinfected at the new site before it is used on that site.
8. Nets, totes, and gloves used during sea lice monitoring shall be disinfected between cages.

Boat traffic

1. All boats should be subject to annual third party biosecurity audits.
2. Boats operating around confirmed positive ISA sites should have more frequent biosecurity audits.
3. All boats must have a clearly established "home" bay management area they operate out of. Boat traffic between marine sites and between processing plant wharfs should be minimized.
4. Wherever possible, boat traffic between bay management areas should be eliminated.
5. When boat traffic between marine sites or between marine sites and processing plant wharfs is unavoidable, boats should be disinfected as per the protocols and levels specified in Appendix G.
6. Where boat traffic between bay management areas is unavoidable, boats should be disinfected as per the protocols and levels specified in Appendix G.
7. No "Bus Stop" traffic patterns are allowed unless it is the sequential delivery of fish, goods, or services to sites that have no fish on them and have been appropriately disinfected and fallowed.
8. This does not preclude delivery to a site containing fish as long as the boat does not subsequently proceed to another site.
9. Where a boat travels into or operates in a bay management area other than it's "home" bay management area, it should operate according to the standards

established under the Bay Management Plan of the bay management area it is operating in.

Site Fallowing

All Farm Occupants in a Bay Management Area shall develop site-specific fallowing plans and procedures. These plans and procedures shall be reviewed and approved by the Bay Management Group.

1. All Farm Occupants shall include fallowing periods in their normal production plans unless specifically outlined under the transition mechanisms of their approved Bay Management Area Plan.
2. Two levels of fallowing are to be used. The level of fallowing is determined by the health status of the site as defined below in Table 1.

TABLE 1

SITE HEALTH STATUS	FALLOWING LEVEL
No clinical disease of regulatory concern has occurred and no cages of fish were depopulated due to confirmed positive ISAV tests during the entire production cycle of the last year class to occupy the farm.	1
A clinical disease of regulatory concern or any cage of fish was depopulated due to confirmed positive ISAV tests.	2

Level 1 fallowing:

- Remove all fish being held on the lease site;
- Remove, clean and disinfect all nets according to the protocols specified in Appendix N;
- Properly clean and disinfect all equipment including, but not limited to, cages, ropes, boats, grading, harvesting, and feeding equipment according to the protocols specified in Appendix N;
- Minimize all traffic to and from the site; and
- Leave site fallow for as long as it is reasonably possible.

Level 2 fallowing:

- Perform all Level 1 fallowing protocols. In addition, perform the following Level 2 protocols;
- Remove to land all cages, barges, boats, mooring balls and feeding pipes;
- Scrape, clean and if possible disinfect all mooring lines and grids; and
- When towing cages, barges, boats, mooring balls and feeding pipes to land, care should be taken to not transit close to any farms that have not triggered Level 2 fallowing requirements. If this is not possible, cages and all equipment should be scraped, cleaned, and disinfected in situ.

APPENDIX E

INTEGRATED PEST MANAGEMENT GUIDELINES

All Bay Management Groups shall develop and implement a bay management area integrated pest management plan. IPM procedures include BMPs that will reduce the need for use of chemicals or medications. Details of these procedures may be determined and recommended by the Industry Fish Health Committee. Bay Management Area IPM Plans should at a minimum include:

- Coordinated bay-wide treatment to reduce initial infection from external sources;
- Stocking of sites with single year class;
- Fallowing between year classes as per Table 2, and according to the standards and protocols outlined in Appendix D;
- Continuous efforts to minimize stress;
- Selection of fish strains for greater resistance to sea lice infection;
- Use of late fall/early winter treatments to clean up fish;
- Use of filters/screens on water drain when using fish pumps;
- Use of cleaner fish (such as Wrasse) where available;
- Routine monitoring of sea lice populations at least bi-weekly, when water temperatures are greater than 8ºC monthly when water temperatures are between 6ºC and 8ºC;
- A maximum threshold for sea lice counts is presently 1 gravid female and 5 pre-adults. At the discretion of the licensed veterinarians, treatment may be initiated before such a high count is reached;
- All cages on a site should be treated simultaneously or within the shortest possible time;
- All Farm Occupants support the continued development of alternative therapeutant and management methods in order to reduce the development of possible resistance and minimize chemical use;
- In the event that carry over of market fish is used as a transition mechanism, all carry over fish must be treated for sea lice before stocking of different year class smolts at the same site; and
- All fish treated for sea lice must not be harvested prior to the FDA mandated withdraw time.

TABLE 2

TEMPERATURE (ºC)	MINIMUM NUMBER OF FALLOWING DAYS
> 11º	30
9-11º	35
<9º	42

APPENDIX F

WASTE MANAGEMENT GUIDELINES

All Farm Occupants in a bay management area must develop site-specific waste management plans. These plans will be reviewed and approved by the Bay Management Group.

1. Site specific waste management plans must be designed to minimize the generation of all waste types.

2. Whenever possible, site specific waste management plans should encourage recycling of waste except in cases where human or animal health may be compromised.

3. In these cases, a clear containment and disposal method must be outlined. These methods and actions must be designed to minimize any human of fish health risks associated with the waste.

4. Site specific waste management plans should clearly identify all wastes generated on a site. Wastes should also be classified with respect to any risks associated with their collection and appropriate disposal.

5. All site specific waste management plans must address at a minimum:
    - Human waste;
    - Feed bags, scrap rope and netting;
    - Fish mortalities;
    - Packaging materials; and
    - Any chemical or fuel spills.

APPENDIX G

DISINFECTION GUIDELINES

All Farm Occupants in a bay management area must develop site-specific disinfection programs. These programs shall be reviewed and approved by the Bay Management Group.

- Site specific disinfection programs must address all three phases involved in disinfection procedures; cleaning, disinfection and isolation;

- Wherever possible, site specific disinfection programs must address all current known transmission and infection risks;

- Any disinfection procedure can be rendered ineffective by poor quality control or implementation. All site specific disinfection programs must include components that demonstrate that Farm Occupants and management continuously strive to ensure all employees recognize the importance of proper disinfection procedures;

- Site specific disinfection programs must include adequate documentation components in order to verify consistent implementation and identify employees responsible for their implementation;

- All disinfection procedures should only use cleaning agents and disinfectants approved for use by the EPA and USDA;

- Disinfection procedures should not include any off label use of cleaning agents and disinfectants;

- All disinfection procedures should be consistent with manufacturers recommendations with respect to worker health and safety;

- All disinfection procedures should comply with EPA and DEP regulations pertaining to the discharge into the environment of the cleaning agents and disinfectants;

- Site specific disinfection programs must include procedures that assure that subcontractors used by Farm Occupants understand and follow disinfection guidelines outlined in this Appendix and all other relevant protocols in the Bay Management Area Plan; and

- All site specific disinfection programs and procedures should be consistent with the guidelines established by the Maine Aquaculture Association Fish Health Committee. These Guidelines are as follows:

Effective Disinfectants

The effectiveness of most disinfectants is greatly reduced by organic material. All objects must be thoroughly cleaned prior to disinfecting.

The following is a list of disinfectants that are effective against ISAV:

- sodium hypochlorite (100-1,000mg/l water for minimum of 10 minutes);
- iodophor (100-250mg/l for 10 minutes);
- formaldehyde (1.0% for 16 hours);
- formic acid (pH <4 for 24 hours);
- sodium hydroxide (pH > 12 for 7 hours);
- heat (>55C for > 5 minutes);
- ozone (8 mg/l/min for three minutes – corresponding to a Redox potential of 600-750mV);
- UV radiation (120mJ/cm2) ; and
- Sodium thiosulfate can be used to neutralize chlorine or iodine disinfectants.

Note: The choice of a particular disinfectant should be based on it's efficacy in a particular application, whether it is approved by EPA and USDA for that application, and what, if any, environmental or worker safety risks may be associated with it's use.

Egg Disinfection

- Contamination of gametes with urine, feces, blood or other organic matter should be avoided during spawning;
- Fertilized eggs should be rinsed thoroughly with fresh water;
- Disinfection of pre-hardened eggs should occur as soon after fertilization as possible, using a buffered iodophor at a concentration of 100ppm for 10 minutes;
- Great care must be taken to separate pre-disinfection activities (dirty area) from fertilized disinfected eggs (clean area). No equipment or personnel should be allowed to cross these areas; and
- Disinfection of eyed eggs should be conducted using iodophor solution to give 100ppm prior to hatch or movement to another location.

Equipment

To achieve maximum efficacy of disinfectant, all objects prior to disinfection must be thoroughly cleaned and free of all organic material.

- Remove debris and organic fouling with brush and/or high pressure hose;
- Clean equipment using a detergent prior to disinfecting;
- All other equipment used in the cages must be cleaned and disinfected before being used in another cage;
- Use separate equipment for separate sites;

- Disinfect feed totes after leaving your site. Do not use feed totes for any other use except food;
- Disinfect feed scoops; and
- Cages and components must be thoroughly disinfected prior to restocking. This includes scraping and cleaning of all organic matter, and disinfection with an appropriate disinfection method.

Visitors

- Limit visitors to your site;
- All visitors should be issued appropriate footwear that is site specific and easily disinfected. Sneakers are not appropriate;
- Disinfect boots and gear on all visitors before entering and leaving your site and/or vessels. Sites should have gear designated solely for visitors rather than allowing visitors on site with their own gear;
- Footbaths must be present throughout the site and replaced daily; and
- Staff gear should only be used at one site and regularly washed and disinfected, particularly after harvesting.

Nets

- Nets must be cleaned of all organic material before disinfecting;
- Nets should be cleaned on land, if possible;
- All nets from confirmed positive ISA sites should be taken to land for cleaning and disinfection;
- Dirty nets being transported to shore should be contained in a manner, which prevents the loss or spillage of organic matter;
- Nets, which cannot be cleaned on land, should be cleaned as far away from any cages, but still on site, if possible;
- Nets from a positive cage should be taken ashore to be cleaned and disinfected at a proper facility. All efforts should be made to contain all material from the net (mussels, etc.) from being spread around the wharf, loading areas, etc.;
- Material collected during net cleaning should be disposed of appropriately; and
- Care should be taken to ensure that the cleaning/disinfecting procedure used for nets does not adversely affect the anti-foulant treatment or breaking strength.

Diving

- If possible, a separate boat or scow (steel or fiberglass construction) should be dedicated to diving only;
- Disinfect divers thoroughly between cages, before, and after leaving your site;
- Dive on suspect and/or positive cages last and disinfect between diving on cages by full immersion;

- Diver must have a complete, separate suit for each farm;
- Mort tubs, disinfectant tubs for diver, etc. can be kept separate and away from remaining equipment. Proper disinfection practices should be followed, i.e., disinfect boat, tubs, raingear, etc. after every dive;
- All mortalities are to be taken ashore and disposed of in an approved facility. Use totes for morts and morts only. No cracked or leaky totes should be used. Use plastic liner for mort totes to prevent spillage during transport. Mort containers should be site specific and have the site name clearly identified;
- Mortalities should be removed at a minimum weekly; however, the goal should be daily removal. Have diagnostics done monthly on moribund fish. Have separate mort bags for each cage or alternate bags between cages so that one bag will soak in disinfectant for 10 minutes or more. Mortalities should be placed in a leak-proof box with a liner;
- Mortalities are to be removed daily if they exceed 0.05% per day. Each pen must have its own mort bag and any weak fish should be dipped from the surface; and
- Personnel tending divers should have gear designated solely for this purpose.

Wharves

- At the wharves, boom truck operators and loading crews must avoid all spillage. If spillage does occur, every effort should be made to contain the spillage, clean and disinfect the area;
- Always load the boom truck on even ground. Strap harvest tanks evenly;
- All trucks must be equipped with disinfectant, a sprayer, and a brush;
- Disinfect barge/boat and all gear after leaving the wharf; and
- Disinfect boom truck and all gear including straps after unloading boat/barge.

Boats

- All boats should maintain a disinfection log that documents the cleaning and disinfection procedures used on the boat;
- At a minimum, the disinfection log should identify what specific areas of the boat were cleaned and disinfected; the cleaning, and disinfectant agents used, the date of such procedures, and the signature of the responsible employee or boat skipper;
- All boats shall have their hulls cleaned and scraped regularly to minimize biofouling;
- Boats operating in bay management areas with positive ISA sites must have their hulls cleaned and scraped twice annually or once annually and use an effective antifoulant hull paint;
- All boats carrying live or dead fish must clean and disinfect all areas of the boat from the waterline up before and after each trip;
- Particular attention should be paid to areas of the boat and fish handling equipment that come in direct contact with fish or water fish have been in;

- All boats carrying live or dead fish must fill out their disinfection log after each day they have carried fish; and
- When cleaning and disinfecting any boat, particular attention should be paid to areas that are difficult to access. Wherever possible, vessel and equipment design should minimize such areas.

Two levels of boat disinfection are to be used. The level of disinfection required is determined by the operational circumstances as defined in Table 3.

TABLE 3

OPERATIONAL CIRCUMSTANCES	DISINFECTION LEVEL
Travel from confirmed/suspected ISA site to ISA negative site	2
Travel from confirmed/suspected ISA site to another confirmed/suspected ISA site	1
Travel from ISA negative site to a confirmed/suspected ISA site	1
Travel from a bay management area with any confirmed/suspected ISA positive sites to a bay management area with no confirmed/suspected ISA sites	2
Travel from a bay management area with any confirmed/suspected ISA positive sites to a bay management area with any ISA negative sites	2
Travel from a bay management area with all ISA negative sites to a bay management area with all ISA negative sites	1
Travel from a wharf associated with loading/off loading of vessels coming from confirmed/suspect ISA sites to ISA negative sites or bay management areas with no confirmed or suspected sites	2
Travel from a wharf associated with loading/offloading of vessels coming from a bay management area with any ISA confirmed/suspect ISA sites to a bay management area with any ISA negative sites	2

Level 1 Cleaning and Disinfection:

- Establish a "clear deck";
- Any ropes, straps or equipment removed during the process of establishing a "clear deck" should be cleaned and disinfected prior to stowing;
- Thoroughly clean all surfaces from the water line up of any organic material or inorganic particulate matter;
- Special efforts should be made to remove any fats or oils;
- Coat and scrub all surfaces using an anti-biological detergent and hot water; allow appropriate contact time;
- A low pressure applicator may be used to apply detergents;
- A high pressure washer may only be used for initial cleaning prior to detergent application or after detergent application for rinsing detergent off after the appropriate contact time;
- After rinsing all surfaces, apply the appropriate disinfectant and allow the appropriate contact time;
- Do not rinse disinfectant off surfaces while still moored to the cage site or off loading/loading dock as rinsing with water from immediate proximity may re-contaminate the vessel;
- Do not rinse disinfectant off surfaces while in the immediate vicinity of any other farm site or dock during transit; and
- Fill out and sign cleaning and disinfection log immediately.

Level 2 Cleaning and Disinfection: Perform all Level 1 cleaning and disinfection protocols. In addition, perform the following Level 2 protocols:

- Internally inspect, cleanse, and disinfect any fish pumps and vessel wells;
- Ensure that cleaning agents and disinfectants are repeatedly cycled through all pumps, pipes, hoses and/or valves that may have contacted fish, fish water or blood water; and
- Slip or careen the vessel, clean, scrape, wash, and disinfect the hull.

HARVEST PROTOCOL

Pre-harvest

- Boat and harvest gear should be steel or fiberglass;
- Completely scrub and disinfect boat and gear using disinfectant at appropriate concentrations, prior to loading fish boxes;
- Disinfect and inspect fish boxes for any broken, dirty, or missing plugs prior to loading. Boxes must be in a good state of repair, with tight fitting covers. Liners should be used properly;
- When harvesting a positive cage, the cage should be sweep-seined or cork-seined. If taking any partial cage, fish should be sweep-seined with all of the

fish in the seine being harvested. If harvesting all fish in a cage, a cork-seined should be used;

- Care must be taken to ensure that there are no escapes; and
- Morts must be removed from cages prior to harvest.

Harvesting and Bleeding

- Cutting table should be designed in such a way so that blood runs into the bleed tank, not over the sides;
- Fish should be properly anesthetized to avoid blood, scales, and slime from being flipped off the cutting table; and
- Bleed tank should be covered to prevent blood loss.

Loading Fish Boxes

- Fish boxes must have plastic liners, which are to be tied up when full. Water levels should be 8-10 inches down from the top of box to prevent spillage during off loading and transport to processing plant. Lids must be tight fitting;
- A disinfectant hose must be on hand in case of a spill on deck; and
- Deck hoses must have on/off valves to prevent excess water across decks and overboard.

Prior to Site Departure (After Harvest)

- Scrub and disinfect all boxes, harvest gear, rain gear, boots, gloves, etc. Gear used by harvest personnel must not be used for any other purpose;
- Knock-out and bleed tanks contents to be disinfected and drained into a holding tank to decrease chances of a spill; and
- Soak all deck lines, shovels, brails, etc. in a disinfectant tub.

All of the above are to be completed *before leaving the farm*, not while sailing, to prevent any contamination to neighboring farms.

Unloading Procedures

- Disinfect fish boxes before off loading;
- Pump or boom off knockout water and blood water into watertight containers. Care should be taken to avoid *any* spillage;
- Avoid leaving fish boxes on wharf;
- Decks should be clear for scrubbing and disinfection after boat is unloaded; and
- Unloading should be performed at a wharf as far removed form existing sites as possible to further reduce risk of contamination.

Harvesting Without Bleeding

- Fish less than 4 lbs testing positive for ISA will be harvested without bleeding;
- Fish should be brailed or dipped directly into boxes with liners, with every effort being made to contain any scales and slime within the liner; and
- All other pre-harvest and post-harvest procedures remain the same.

Processing Plant

- All boxes and covers must be thoroughly cleaned and disinfected;
- Liners must be disposed of properly;
- Any morts and fish waste must be disposed of properly;
- Effluent from processing must be contained and treated with an appropriate disinfection method; and
- Bloodwater must be contained and treated with an appropriate disinfection method.

APPENDIX H

BAY MANAGEMENT AREA PLAN TEMPLATE

1. Bay Management Area Mission Statement:

SECTION 1
MISSION STATEMENT

As marine farmers, we have a strong vested interest in healthy marine ecosystems and a clean marine environment. Our mission is to achieve long-term viability and competitiveness in the Maine Salmon Farming Industry with a continued commitment to environmental sustainability and stewardship. We seek to promote responsible development and management of the Maine Salmon Farming Industry in order to assure the production of high quality food while respecting environmental considerations and consumer demands.

To fulfill our mission we will strive to implement the following goals:

a) Implement a Bay Management Plan designed to facilitate operational coordination to minimize fish health and environmental risks;
b) Establish single year class sites and bay management areas;
c) Ensure that bay management areas that are in full compliance with the goal of single year class sites

shall not revert to multi-year class sites and/or bay management areas;

d) Achieve minimum fallowing periods between year classes designed to minimize fish health and environmental risks; and

e) Support continued research on carrying capacity in bay management areas.

2. Bay Management Area Boundaries:

SECTION 2

The Farm Occupants located within the Bay Management Area referred to as Bay Management Area # __ agree to define said aforementioned Bay Management Area based on the following geographic reference points.

NORTH BOUNDARY:

SOUTH BOUNDARY:

WEST BOUNDARY:

EAST BOUNDARY:

These reference points and defined boundaries are based on NOAA Nautical Chart Number _____ dated _____.

3. Bay Management Area Farm Occupants:

SECTION 3

BAY AREA # _____

FARM OCCUPANTS:

1. _____
   Name

_____
Site Name

_____
Site Number

_____
Bay Management Group Representative

2. _____
Name

_____
Site Name

_____
Site Number

_____
Bay Management Group Representative

3. _____
Name

_____
Site Name

_____
Site Number

_____
Bay Management Group Representative

4. _____
Name

_____
Site Name

_____
Site Number

_____
Bay Management Group Representative

4. Bay Management Area Long Term Target:

5. Bay Management Area Transition Period:

6. Bay Management Area Constraints:

7. Bay Management Area Actions Required:

8. Bay Management Area Time Period:

9. Bay Management Area Transition Mechanisms:

10. Bay Management Area Communication Plan:

11. Bay Management Area Waste Management Plan:

12. Bay Management Area Integrated Pest Management Plan:

13. Bay Management Area Fish Health Management and Biosecurity Plan:

14. Bay Management Area Disinfection Protocols: